

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 – 10 (Cancelled)

Claim 11 (New): A method for detecting a perpendicularity error of the guide rail of a lift, comprising the steps:

- (1) selecting a plurality of monitoring points on a side or top working surface of said lift;
- (2) obtaining a positional coordinate of each said monitoring point in the longitudinal direction of said guide rail and obtaining the distance between two adjacent monitoring points;
- (3) measuring the included angle between the connecting line of said two adjacent monitoring points and the plumb line; and
- (4) obtaining said perpendicularity error of the guide rail of said lift from a calculation performed by a microprocessor.

Claim 12 (New): The method of claim 11, wherein said positional coordinate, said distance, and said included angle are sent to said microprocessor.

Claim 13 (New): The method of claim 12, wherein said calculation performed by said microprocessor is based at least partially on said positional coordinate, said distance and said included angle.

Claim 14 (New): An apparatus for practicing the method of claim 1, comprising:

- (1) a frame;
- (2) at least two detector heads adapted to contact with a working surface of a guide rail of a lift;

- (3) a displacement sensor capable of measuring the displacement distance of the said director heads sliding along said guide rail;
- (4) an inclination sensor capable of measuring the included angle between the connecting line of two detector heads and the plumb line; and
- (5) a microprocessor capable of analyzing said displacement distance and said inclination; wherein said detector heads, said displacement sensor, said inclination sensor, and said microprocessor are installed either on or in said frame.

Claim 15 (New): The apparatus of claim 14, further comprising a power supplier installed on or in said frame.

Claim 16 (New): The apparatus of claim 14, wherein each of said displacement sensors and said inclination sensor has at least one output terminal and said microprocessor has at least one input terminal; said output terminal being connected to said input terminal.

Claim 17 (New): The apparatus of claim 15, wherein at least one of said detector heads is of a roller type with an excircle surface contacting with said working surface of said guide rail.

Claim 18 (New): The apparatus of claim 15, wherein at least one of said detector heads is of a slide block type with a sliding surface contacting with said working surface of said guide rail.

Claim 19 (New): The apparatus of claim 15, wherein said detector heads comprising a pressing unit, said pressing unit keeping said detector in contact with said working surface.

Claim 20 (New): The apparatus of claim 19, wherein said pressing unit is of a spring type or a magnetic power type.

Claim 21 (New): The apparatus of claim 17, wherein said displacement sensor is a rotary encoder.

Claim 22 (New): The apparatus of claim 21, wherein said rotary encoder is connected to said detector heads by a flexible coupling.

Claim 23 (New): The apparatus of claim 15, wherein at least one of said displacement sensors is a photoelectric sensor.

Claim 24 (New): The apparatus of claim 23, wherein said photoelectric sensor does not come in contact with said working surface of said guide rail, leaving a gap between said photoelectric sensor and said working surface.

Claim 25 (New): The apparatus of claim 24, wherein said gap is at least 1 mm.